he and Descartes carried on an intimate correspondence, each being a great admirer of the other. Little, however, could either have guessed that Christian, then only a child of three, would one day far outrank his father and would, in point of mathematical ability, rival his father's distinguished friend.

QUESTIONS AND DISCUSSIONS.

EDITED BY W. A. HURWITZ, Cornell University, Ithaca, N. Y.

DISCUSSIONS.

To a question raised by the editor in connection with Professor Light's "Note on curves whose evolutes are similar curves" [*1920*, 303], as to the existence of other curves possessing the stated property, an answer is given below by Mr. Franklin, who derives in a simple way the result, stated by Puiseux, that an infinite set of such curves exists. A rather interesting incidental feature is found at the end of the paper, in the construction of a sort of geometrical "sum" of two curves as the locus of the sum (as determined by vectors starting at the origin) of points on the two curves at which tangents are parallel. The especial interest lies in the fact that exactly this process of composition of curves has been mentioned recently in an entirely different connection by Professor W. B. Carver[1]; the curves to which he applies the process are algebraic, while those of Mr. Franklin are transcendental.

Proofs of the law of tangents in plane trigonometry have been given recently by Cheney [*1920*, 53], Lovitt [*1920*, 465] and Epperson [*1921*, 71]. In a letter to the editor, from which an extract is printed, Professor Mathews calls attention to various other proofs of the law. It is clear, as Professor Mathews states, that other new proofs can be devised in considerable number from a suitable figure; it therefore seems desirable to bar consideration of further proofs, unless they involve new principles.

As the third discussion, we print a note on the nature of expository papers for presentation to the Association.

I. ON CURVES WHOSE EVOLUTES ARE SIMILAR CURVES.

BY PHILIP FRANKLIN, Princeton University.

In the July–September number of the MONTHLY [*1920*, 303] there appeared a discussion of curves whose evolutes are similar to themselves, by Professor Light. He found that the only curves having this property and having their intrinsic equations of the special type $AR^n + BS^m + C = 0$ were the logarithmic spiral and the cycloidal curves. The editor inquired whether any other curves possessed this property.

[1] "The failure of the Clifford chain," *American Journal of Mathematics*, vol. 42 (1920), p. 167.